

April 1972

Perma Hide

Perma Hide®

MEMO BOOK

NO. M46

100 SHEETS

29¢

NEW YORK LOOSE LEAF CORP.



2179

2185

~~2188~~ Messy

2201

2206

2207

2227

2239

2249

2253

id.

San Idmananthus

2224

2224

cheo

has

These are
missing

HK

2179 San Idhamanthus

2185

2224

~~2188~~ ~~Mesophylla~~

2201

2206


2207 - [2224]
2227
2239

2249

cheo

2253

has


These are
missing
HK

2208 - only 1 label
in pack of

3

~~Wendell~~

2224

is in the lab.

Var x ramificae en muchos repit.

O. latifolia Coll. ~~del~~ de
Lanitas, Pinar del Rio, 1971

Cryptochloa pinnivoides -

Panamá, Santa Rita -

R. L. Dressler 4037 - June 26, 71

(an epiphytic my base was 10
bractadum, at least, from
a terminal node of a
strobilus axis -

March 21. Ubatuba (1)

2181 *Pirene* ^{symploica} soil # 14 (4 vials)

2182 *Pariana lanceolata* (3 vials)
soil 13

March 22 soil 15.

2183 - *Roddia portoi* 5 vials

2184 - *Grenvillea* 4 vials soil 16

2185 - *Schusanthus* - 1 vial

Termómetro perto da micróscopica,

21, perto da zipinática, 22

minimum 72°F

maximum 78°F (plant

level - (die ant. 68°F, 78

Soil Temp. 78 -

March 23 Ubatuba

Temp. ^(high 22) Max. 78°F

min. ~~66~~ 66°F

soil Temp. 77°F at 10 a.m.

Roddia portoi (bl. negro) 5 vials

2186 *Roddia* ^{hyssopifolia} "

alt. S. n. m. 90° E. m.

soil sample # 17

note at 50-60

Município Aurelino Leal
Fazenda Santa Maria
^{dueno} Francisco Aragão de Lima
12 Km SW de Nbaritaba
going to hoje to banco -

2187

Radiolys monophyle
spendantissime

(fotos color) fl. + negro

soil sample # 18

alt. s. m. m. 100 m.

soil temp = 76° F.

FRA, 3:1, Bag. 3 vials

Fazenda Santa Luzia

Proprietário Maria Rosa
Rocha

Município - Aurelino Leal -
4 1/2 Km de Banco Central

Olyra filiformis v. *capillata*

Rod. Lamacau - Lananeira

3-30 Km L de Lamacau

Plantação de cacau

Belém et Apurí
1389.

28-7-1965

Picea leptophylla.

626. 2047. (18-1-68)

Sto Luz Cabralis, km 5 canal
de Sto Luz Cabralis.

Pinho 1706 - *Picea* 4-11-71

Rod. Sto Luz - Laranjeiras,
Canal do Bandeira.

Plantação de cacau e copim
Nota litórea.

Erinite.

626. 2054 (1968)

Lamaca, km 19 rod. Lams -
can para Itaimbé.

Olyra nanocrisium

S. len. bahiae - Reserva
biologica do pau-brasil

T. S. Santos 1914 - 15-9-71
10.

Real.

Mina x Olivença, Mata
costeira, Montanhas de
passara

Pinkens 1552 6-8-71

Olivença, estrada ao Marim
Mata do bururupé, próxima
ao litoral, solo arenoso

19 Aug. 1970 - T. Santos 1020.

Rollo 43

ultimo usato

comenzò con

44

Rollo 44: Cerro Jefe - 7 parte
Santa Rita (Tinto, 2-3 fotos de las)

Rollo 45: Santa Rita: longi-
tudinal, long. Dromedari, Paname
en flor -

7th *Techmanthera* sp. 2188 (4)
at 250 m. s. m. = solo FAA

March 24, 1965
2189 ✓ *MBB*

2nd *Bambusa* sp.

300 m. s. m.

rather hasty 44 m.

rigid leaves.

6 leaves x 1 m. the principal
leaves for 10 days to 10 m.
soil sample 19

FAA, variegated, e/f & r/g

tall, leaves & stage, leaf

Photo: color & bar

Ba. *Memph. de Lhéris*, Distrito
Pedra Queimada, Serra
Temerosa.

check.

Meristichys -

March 25, 1972

2198

Bo, Municip. Aruguce, Distrito
Tedes Queimada - Foz de
Pancade Formosa -

Bauro -

Alt. s. n. m. : 120 m
stems climbing up to
12-15 m - culms
hollow - stem sheath
deciduous, with black
reflexed at very young
falling - only branches
(6)? by node -
soil sample #20

FAA (1) no photo, no
nat.

2 rollers color - similar (3. cm
6 rollers Trix similar (4 at 9) -
censu

#3 recorded in Itaboraí -

2 rollers (1, 2) in Rio con Tom -
Total recorded Rio: 8 rollers - WM

Brazil 1972

Bahia: March 5-

Cleo E. Colverson

EBB, 2003 (1908)

Chusquea umbellata (Raddi) Wack.

ce. $14^{\circ}50'20''$ lat. South
 $39^{\circ}20'15''$ long. West

Bahia - ~~Itabuna~~ Ferradas
Fazenda Aberte Grande, 14 Km
from Itabuna. (W)

Diandrolysis? digitate

2159

March 8, 1972

Brasil, Bahia, Mun. Itabuna

Distrito Ferradas, Fazenda Aberte Grande,
14 Km W of Itabuna
alt. s.m.m. - 100 m.

14.15 hrs. Atm. temp.:

Wet: 78°F

Dry: 83°F

Humidity 78%

soil temp. 77°F .

soil sample n°1 = taken at
0-20 cm, from 3 spots

Flotop: ± 10 from roll # 3

anal: from roll n° 4. BxW-

FHA: leaves, inflorescences, shoot
apex, seedlings; some leaves
with the white spots (probably
a disease)

Bouquet: inflorescences, ♀ flowers

3:1: inflores. + staps.

4 vials

Photo: color Ekta. roll # 1? beginning of the

In secondary forest with
some coconuts plants.

Small plants in dense
clumps near trail.

(Looks like a little *Calanthe*)

It does not look like an
Ophrys because the prothall habit
is very dense and compact.

♂ *Ophrys*: with flowers and
both sexes, greenish normal color
in the 3 specimens examined.

Mostly all of the infl. in separate
short stout axes by a single
leaf blade.

Leaves with white spot, probably a
disease. Many seedlings were found
(centro) within the clumps.

alt. s. n. max 100 m.
tect.

Diandrya? sp. nov. 2160

at 3.50 p. m.

Wet bulb Temp: ~~78~~° F 80

Dry bulb Temp: ~~80~~° F 85

% Rel. Humidity: 82% ~~80~~

Soil Temp.: 77° F (at 4.30)

soil sample: n° 2: taken

from 2 places, at 0-20 cm.

Photog: roll # 4 bl & w.

with green filter, no tripod (good
light).

~~vials~~ ~~settings~~

FAA: 1 frasco soil: leaves, inflores.
with attached leaves

3:1: 1 inflores.

~~2~~ 2

Same area, but in darker
place - small clumps
scattered in dark places,
usually around trees.

Plants much larger than

the first collected but with
the same type of inflorescence.
Few with flowers.

2161

Diandrylops? *prode*? (small
clim near normal plants.)

no fixed material

Photo-colors, Ektachrome roll # 1?

~~several shots, some with the *Diandrylops* *clim* it~~

K 2162
Streptochaeta spicata

no fixed material

seen but not collected:
Pharus (large plants),
Radiolysia monophylla.

Dianadrypa sp. (chipmunk)

March 10, 1972 2163

Bz, Ba. ^{Myn. Itabuna} ~~Itabuna~~ Ferrado
Fazenda Abete Grande, 14 Km W
of Itabuna

Not far from where we collected

Dianadrypa - first time

light: at 12.45 p.m.

without filter: 15, +2 points

red: 14 1/2

blue: (without 15) 14

green (11 ~~15~~ ¹⁵) ~~12.3~~ 14.1

yellow (without 13, 2) = 13.1

light changing rapidly due to
big clouds.

Soil temperature:

Atmospheric press.: 753

Alt. s. n. m.: 110 m.

Temperat. at 1 p.m.

Wet bulb ~~83~~ F 81

Dry bulb - 90° F

% Relat. Humidity ~~70~~ 70%

no fixed material.

2164 - *Diandrya* *pubula*
2165 - *R. polytrichoides*

In dark places, ~~under~~
under taller vegetation
Another species of *Diandrya*
the large one (coll. 2100)
growing nearby. Here this
last *Diandrya*
was much more abundant
than in the first place.

~~11.12.1972 to 13.12.1972~~
2164
Dioscorea grade.

~~no fruit found~~
FAA: seedlings.

Roddie? *Polypodium* sp.

March 13, 1972

Bn. Behie, ^{Mun. Habuwa} ~~Maricao~~ Ferrola,
Fazenda Aberto Grande

C. C. lottieri 2165

Alt s. n. m. 80 m.

Abundant ^{along} small ^{the water} creeks
at the edge or near ~~stream~~.

In very dark, shady ^{forest} place.

It grows in small clumps,
fern-like, under larger
plants or on the banks of
the stream.

It seems that the ♂ inflores.
have finished or so; many
empty, old axes. Female
inflores. still blooming
mostly in smaller clumps with
very few leaves.

Very thick and long roots

soil temp. 76-77° F.

light int. : sat 3.45 pm

without : .. 12

yellow : 2°/+°

green : with 0-12

" : 2°/-°

blue : with 0-12

" : 1°/+°

red : between 1 & 2°/

Temp. ± 83

6 trials 6

FAA : 1) leaves, inflorescences

2) ♂ sym flowers, 3) seedlings

Borg : 1 ♀ spkl.

3:1 : 1 ♂ spkl. & 2) root tips

K, MO, NY, P, LE, B, F, G, W

Cardiodyne 2166
Reddydyne monophylla

Frequent in forest, shady,
humid places.

3 vials

FAA (leaves and flower) B. 3:1

K, MO

O. latifolia 2167

March 18, 1872

Br, Be. Municip. de Ithéus,
Liberto lastelo Woro, Fajardo
Santa Rita, Km 4 Protonis
lastelworo - Ithéus.

"Mate". Open forest in
slopes, rather dry soil.
Large plants up to 5m
tall, no branching, large
leaves, few ~~for~~ in flower.
of 2' or 3 orders

no plots

FAA, B. 3:1

3 vials

3 vials -

2168

Stainia ple-phe?

In open places, along trail. Plant up to 1.50 m or more.

FAA, Borg. 3:1 no photo

2169

Lobanthus Enemoralis
(Schrad. ex Schultes) A. G. Hitch.
Along trail in open places
several inflorescences from
most of the nodes.
Plants growing under
other vegetation

no fixed material or photo

~~*Phoradendron gijonense* T. & G.
- *volubilis* -~~

March ¹⁴ 5, 1972 K 2170

Brazil, Bahia, Mun. Itaerá.
6 km ^{South} ~~from~~ *Uruguaia* → Itaerá.

Phorad. sp. (gale)

~~*gijonense* or *agrostoides*~~
In secondary forest at the
edges around cocoa plantations.
Frequent in open, shady
places.

FAA: ① leaves, surface split -
1 base of culm.

Borg: branches of inflorescence.

seeds -

no photo.

Soil sample: n° 6

2171 Nam, chico

2172 O. filiformis + fleccato?

2173 Olyx latif? ramificando

— main axis with
"end blüte" —

K, MO, NY, F, LE, B

2171

March 15, 1972

Pharus sp. (chico)

Bs, Ba, Municipio de Ithaca,
6 Km ^{500m} from Arucas.

In secondary forest with
cocoa plantation.

Growing in open places,
shady. Large group of
plants, forming a clump
of about 25m long x
2-3 m wide. Plants
growing vigorously, in
all stages of flowering
seedling and small plants
around clumps.

Many plants with
main axis of inflorescence
ending in a "terminal
spikelet"; some very large
and well developed.

A few with more than one spikelet or pair of spk. developed, 2-3 or more pairs like the rest of the pseudocladia. All of them or so, fixed in FAA in a separate vial, cut below joint of ~~an~~ emerging of uppermost pseudocladium. The main axis becomes thinner after the last pseudocladium but like in the normal case of the ferns but buds with the production of a spikelet or pair? Many seedlings seen around plants.

Photo: in color of the groups and some plants.

Black & white: the whole group, individual, close up of inflores. and main axis terminates with spk.

FAA: 3 vials: 50 cc. ¹ leaves, roots, spk in 7 stages, ² shoot apex? ³ termination of main axis with spk. ³ seedlings.

Borg: spk in 7 stages, 3:1 young spk.

Seeds: abundant

soil: sample # 5

Temp: ± 10 cm: 77°

soil temp: 76.5° F.

5 vials.

soil sample # 7

3 vials Alvimia

2172

Ba, Lagoa Encantada,
at 1 km from the
lake and 25 km from
Urugua - Municip. Ilheus

Olyra filiformis L.

K, MO, NY, P, L, E, B, F, G, W, ISC, WIS

In primary forest,
growing in open, shady
places. Frequent.

Beautiful, delicate plants
with rather weak culms.

Inflorescence of several pan-
icles - each panicle
ending in a large white
♀ spike, several small ♂
spikes below.

~~11/11/72~~

Nov 46

2173

Oryza sp. (holifolia)
as per fruit.

Large clump along trail.
No flowers but fruiting
the inflorescence proliferated,
Many branches ending in
small repetitive heads.

photographs:

soil sample 9

March 16

2174

Bremia subulmaria

(Chen)

Municipio Tacaná, ~~Depart~~ Depto. Quintana
Roo, 19 Km
SE of Uxatuba

Soil temp: 75°F

Temp: 2-4 p.m. 72°F

Altitude S. m. m. 100/10 m.

Photo: black & white & color photo

FAA: 1 (sec) lvs. inf. spikes, taller,
intermediate.

bot: from apical

5:17 inf. spikes

Soil sample: # 9

3 vials

~~2175 *Bremia* grass - Soil 8~~
~~2176 *Raddia* sp.~~

Bremia

In shady place, very humid,
near stream, in small
clumps associated with
Raddia polygona.

Plants of ± 40 cm -

Leaves dark green and ash
white below. ~~Many~~ Almost
all plants blooming from
the main culm (apical)
No basal infl. found.

Very long (up to 50-60 cm)
subterranean stem, thin,
white with short sheath
and sometime red or dark
purple color (wine).

Main culm of the plant
purple wine in lower part
($\pm 1/2$ of culm).

Stamens (base of infl.) 10-15

8 vials $\left\{ \begin{array}{l} 2 \text{ FAA} \\ 1 \text{ seedling FAA p.} \\ 3 \text{ 3:1} \\ 2 \text{ Boog} \end{array} \right.$

2175 \rightarrow

Greenite ~~and~~ sp. (grauke)
growing in very humid
place, near or at edge of
stream, sandy and cool
place. Very rigorous plants
up to 2 m, between
rocks, and ~~under~~ ^{under} ~~layers~~ ^{plant}
blooming well from both
apical culm and at the
base. The basal inflores. with
~~short~~ short stems (not so
long like the other Greenite).
Most of them cover ~~the~~
or ~~short~~ by fallen leaves.
The well developed ones emer-
ging from the leaf cover.
Plant with light green leaves
basal infl. thick, large and
green.

60, Municipio de Itacaré,
Distrito Agreste, Foz de
do As Minas - 19 Km S of
Albarrado

Alt. S. n. m.: 100-110 m

Photo: 5 x with, color 2 m

Soil sample # 8

FAA: 3 vial: one with apical infl
& leave, 2 basal infl., 3 seedling

Boog: 2 vial apical & basal infl
3:1 ^{3 vial} (1) apical & basal infl. (2)

Seedling: collected in FAA. Found
only large plants with "huge"
seed, some smaller, seedling
with small, normal size
fruit.

long style with 2 short
stipules, papillose.
More than 1 infl (apical) 2-3
seen in some plants

emerging from the apex
and 1 or 2 nodes below.
besides, each one with
two partial inflorescences.
At maturity upper part
of inflorescence (with ♀)
falling.

No extremely large seed
seen on the plant to explain
the large size, like a
cherry, of the seedling.

There one collected around
large stump gum tree.
Plant extremely

sensitive to ~~light~~ direct light.
We chopped the small tree to
photograph and about 1/2 a
minute the whole plant, the
leaves "re marche tane" rolling
and looking so bad.

~~Reddish~~ polypodioides 3 vials
~~Stephania~~

March 17, 1972 2176

Bo, Mun. Itacare, Distr. Agreste
Fria, Foz de A. Alencar, 19

km south E of Ubatuba

Alt: 100 m., near stream

Photo: color & bl. & white

FRA: (1) top, infl., & rice

bag (1) infl. ♀

3:1: infl. ♂

Soil sample: #10

Very abundant along edge
of near stream, in very
humid and dark places
between rocks.

Form: small clumps
~~seem~~ like ferns.

In some places associated
with *Crinitis* and not (*Crinitis*)
blooming very well.

Uppermost ♀ spathe of ♀ inf.
blooming first.

Piresia macrophylla

March 18, 1972

2177

Bo, Munic. Itacaré, 7 km SW of
Itacaré city.

Piresia ~~simplicifolia~~? Oblique

In 1° forest, dark, rather
dry, and with a semi-
mont bamboo.

Ground covered by two thick
layers of ~~dead~~ old bamboo
leaves. Not many small
herbaceous plants growing.

Collected ~~by~~ herbaceous.

~~FAA~~ fixed the material, not
photograph or soil.

1 vial

descriptions etc. etc. - short time
working. pressed a few and rest very

March 18-19, 1972

2178

be, Munc. Itacaré, 12 km
SW of Itacaré, Munc. of
Itacaré, Rio Jeribucassu
Piresia sp. (Gottsch.)

rhizophylla

Light at 12 noon
without filter 13

green f. = 12-
yellow = 13-
blue = 12- 1/2
red = 12

(Sky cloudy but not very
sunny)

Alt 5. n. m. 0

Temp., at plant level:

min. = 72°F.

max = 78°F.

Soil temp = 78 (at noon)

Soil sample = # 11 red color.

4 vials -

2178

FAA: 2 vials, one with leaves,
root, sphl, some in flower.
2) long basal flowering shoot
and some large typical
symplocaene.

Bow: ♀ sphl. and some
whole in flor.

3:1: 6 whole symplocaene

Photo: 6 x w. end of one
roll and about 15 of 2nd
some in this roll with flower.
color: some in 2nd 18 but
I think isotripods by 19: some
of same roll but correct
setting of f n. lens.
No time for seedlings -

Growing in banks along
river, between rocks,
in very humid and sandy
places. Very abundant,

growing in small clumps,
in some places, almost
terminal repetition.

Associated ~~and~~ with ferns,
many growing under the
protection of larger ferns.
Almost all plant with
flowers or fruits?

Most of them with
apical inflorescences
and basal symp. as
well. Basal symp. are
born in separate shoot
with very reduced leaves
and emerging ascending
"there are not underground
shoot" - looks partially
by fallen leaves.

Many sinflor. seen
with ~~more~~ the two or
more partial inflores.



Partial infl: seems to be
the same type in both
apical and basal ~~shoots~~.

Each ♀ spkl with one
very small ♂ below.
These are deciduous
very rapidly - hard to
find.

Plants variable in ^{size} shape
and position of the ~~top~~
leaves in the leaf complement.
Many leaves in each leaf comp.
sometimes overlapping
each other towards the
apex.



~~Many~~ Plant ± 20-30 cm
many small others seen
by there were young plant
beautiful plant of light
bright green color spkl.

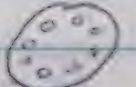
♀ + ♂ - red, dark wine color -

This creek is in the
area of the bamboo
forest - No *Olyrias* seen
in that forest (several stops
and # coll.) only a few
Olyria latif. in poor
shape - and one plant
isolated. 1

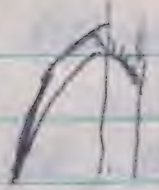
March 18, 1972 2179
Lechnanthus depauperatus M.
Bo, Mun. Itacaré - 1/2 Km SW
of Itacaré -

In a clear spot along
trail of bamboo forest
only few plants seen -
no fixed material, no
photo -

March 19, 1972 2180
Lechnanthus *strawberry* M.
Bamboo
Bo, Mun. Itacaré, 10 Km
SW of Itacaré, in dense
forest
Climbing bamboo, very
abundant all over the
forest for about 10 Km or
more.

Slender culms (up to
10-15 m high. ~~then~~ ~~several~~
as ~~one~~ ~~tree~~ or other
plants, in some places
forming dense mass
of branches and culms.
Culms of about 1-1.5
cm in diameter -
solid but with some
holes in a circle near the
epidermis .

~~Slender~~ Culm sheath persistent
and very thick and hard
at the base; very difficult
to remove - blade of these
leaves deciduous, falling
very early even in young
near culms. Blade narrow
acute and bent downward.

 Several branches
from a node
but one seem to
be dominant, larger
and very thick.

Rhizome not removed.
F.A.A.: leaves, culm,
nodes with buds, some
over sheath young with
blade, shoot apex of
leaf complement, nodes
with small young branches.

Photo: 6 a w, none in
1° roll, rest in 2° roll.

color: no g' algae in
roll #2 (extrajoints?)

Soil sample #12

Soil Temp. = 78°

A. Atm. Temp. = (lower level
at 3.45 p.m. 74° F. (But
outside very hot) cloudy

Alt. s. n. m. = 100 m.

March 21, 1972

2181

Ba, Municipio Aurelino Leal,
Fazenda Santa Maria, Rodovia
Ubatuba - Lago do Banco,
12 Km SW of Ubatuba.

Pirenia ~~symplocos~~ dice?

Fls (inflores) basinensis

Temperat. (48 hours)

High - 78°F | 78°F

Low - 72°F | 68°F at plant
level

Soil temp. 78°F.

Light: not measured.

Alt. s. n. m. - 90-100 m.

Photo: b & w - actual color

F A A: 2 vials: 1 leaf, 1 phl.

2) symplocos of
broad shoot -

Borg: 1 ♀ phl.

3:1: whole partial inflores.

(total: 4 vial).

soil sample : # 14

soil sandy, rather loose
and covered by a thick
cover of organic material,
dark color.

Plant common in
secondary forest of cacao
plantation. Old planta-
tion, \pm 60 years old. with
rather tall cacao plants.
Native tree very big.
Open forest, in a
smooth slope with
rocks.

Growing very well in
scattered clumps around
trees, or rocks, some
also in clear places.

Associated with *Ruellia*
Porteri & *Parsonsia lanceolata*.

All plants blooming, among
with apical inflorescence
leaves dark green, sheath
looking inflated and
with long pubescence.

Growing in the shady
places not in opening
or near road. Mostly
in the lower part of
the slope.

leaf-complement with
few 2-4 leaves.

March 21, 1972

2182

Bo. Munic. Avelino Seal,
Fazenda Santa Maria, Ro-
donia, Mato Grosso - 100 km
to Banco, 12 km S.W.
of Mato Grosso.

Panicum laucolote
alt. 5 m. m. - 90-100 m.

temp.

high - 78-79° F (2 days)

low - 72-68° F

Soil temp: 78°

Soil sample # 13

Fixed material: 3 vials

FRA - leaves, inflores.

Boys. infl.

3:1 - infl.

Photo: same in color

6 x w, sent with Tripp

(8-15)

Not very abundant,
growing in some
spots of the area
usually near rocks.
Associated with Panicum
and Raddia porteri -
beautiful, elegant plant
with very long oral
setae forming a ring
around the

Inflores. thin, all terminal
to the culm, no one
plant seen with basal
infl. Plant about 40 cm

March 22, 1972

2183

Brasil, Bahia, Município de
Aurelino Leal, Rodovia
Ubatuba - Lago do Banco,
12 km S.W. of Ubatuba,
Fazenda Santa Maria.
Raddie (filare)

(The owner of this fazenda
is Mr Francisco Aragão de
Lima).

Alt: 90-100 m

Temperature (Atn.) (24 hours record)

high: 78°F / 78°F (at plant level)

low: 72°F / 66°F

Soil temp. 78°F / 77°F (next day)

Light: not measured.

Soil sample: #15

Fixed material: 5 vials.

FAA: 3 vials: 2) leaves, ♀ flowerings

b) symplocaraceae (♂ & ♀)

c) seedlings

Borquet: ♀ aphan. & flowerings

3:1: ♂ flowerings.

Photo: bl & w = roll #, serial
of plants for the whole association
close up of ♂ & ♀ symplocaraceae
In some places associated with
Rododendron monophyllum.
Lolo: roll?

Secondary forest, old
cacao plantation. Open
type of forest with very
big native trees and
cacao plants planted in
between (but not many).
Cacao plant very robust,
they are trees. It is an

old cacao plantation,
probably more than 60
years old.

The place: forest in a
slope with a very smooth
inclination. With big
rocks. Shady and very
humid place. Very rainy
and also very near the
"Rio Las Lontas". I think
this place is in the valley
of the Rio Las Lontas.
Soil rather loose, sandy
with a thick layer of
organic material.

Plant very abundant,
in some places forming
continuous carpet.
The robust plants grow in
large clumps, rather

stiff culms. Plants very
pubescent.

Many female ~~stems~~
inflorescences from
 $\frac{1}{2}$ the plant and
down. Several partial
inflorescences from each
node.

In many places growing
together with *Pennisetum*
lanceolata,

Pennisetum monophyllum
Many seedlings around
parental clumps (Many
fixed in F.A.R.)

March 22, 1972

2184

Cremites monstrosae

Brasil, Bahia, Município de
Aurelino Leal, Rodovia
Ubatuba - Laje do Banco,
12 km SW of Ubatuba,
Faz. Santa Maria

alt: 90-100 m. S.M.

Temperature (Atmosf.) 2-4 days record

high 78° F | 78° F

low 68° F | 72° F

Soil temp: 78°

soil sample: # 16

Height: not measured

Fixed material: 4 vials

F.A.A. readings: 1 +)

b) leaves, & inflorescences

Bougainvillea; subterranean inflores.
5:1: infl.

Photo: bl & w. roll a
plant with long subterra-
nean shoot dug up
but not ~~more~~ moved
below - below? the same,
plant with subterranean
inflores. and also basal (or in 3/4 way)

This specimen is from the same
locality where I collected it
4 years ago for the first
time.

Plant ~~is~~ not very tall, ±
up to 50-60 cm tall in
dark & humid places of
the slope. Inflorescences from
the base of the plant
the apex of the culm.

and at the end of
the white subterranean
shoot. This infl. are large
like a cherry, and
grow bent towards the
ground! These shoot
are long (we measured
one 1.20 m) and run
parallel to the ground
some rather deep, ± 10 cm
All of them with
inflores. at the end
(hard to dig up without
breaking)

Many seedlings found
from both, normal and
cleistogamous reeds.
Seedlings of large cleistoge-
nous reeds larger than
the ones from normal
reeds.

March 22, 1972

2185

Br. B. Mun. de Rueda
Leal, Fazenda Santa Maria,
Rd. Maitete - Cape to
Banco, 12 Km SW of
Maitete

Lichnanthus nemoralis
(Schrad. ex Schults) A. S. Hitchc.
Frequent in the clump
with Ruellia sp.
and the other Olyra
of the area.

FAA: 1.0 ml
no soil sample, no photo

K, MO

March 23, 1972

2186

Br. Be. Municipio de Aureliano
real, Rodovia Ubatuba -
Laje do Baú: Foz. Santa
Maria, 12 km SW of Ubatu-
ba. ~~Pardalipha~~
~~Pardalipha~~ monophylla

alt. 90 m. s. m.

soil sample # 17

soil temp 77°F (at 10 am)

Temp (atm) x 3 days

high: 78° | 78° | 78°

low: 72° | 68° | 66°

Photo: b & w only - roll #

Fixed material & vials

3:1:

FAA

long -

Not very abundant in
Kericho, grows
a little far from the
road, & in the back of
this area, with some
copper plants. Grown
between a lot of Rodolia
in rather open
places.

K, MO, NY, P, LE, B, F, G, W, ISC

March 23, 1972

Paradiolus 2187
~~Paradiolus~~ monophyllus

Dr. Bo. Mun. de Aureliano
Real: 4.5 km North of
Banco Central: Fajenda
Santa Luzia.
(The owner of the fazenda
is Mrs Maria Rocha)

alt: 100 m s.m.m.

soil sample: # 18

soil temp.: 76°F

Fixed material: 3 vials

FAA: leaves, 9 spms.

Borg: 9 spms

3:1: 8 spms

Photo: 5 & v: roll #

color: ektachrome

at home in the pool light.

Very abundant in
humid and hot places
of forest. Almost to ^{max}
vegetation. It grows all
over the place. Tall and
most vigorous
plant in the darkest
areas.
It grows in large clumps

March 24, 1972

2188

Ichnanthus nemoralis

Br. B.O. Municipio, ^{yes} ~~Distrito~~ Distrito de
Pedra Branca, Serra
Temerosa

Forest in sharp slope of
hill. Shady place between
rocks.

FRA: leaves (-phl?)
no tail - no photo -

~~Chusquea~~ (sg: inversa)
(Retbergia)

March 24 1989

2189

Bamboo

Dr. Bohra, Mun. de Ilheus ^{Si} ~~Distrito~~
Distrito Pedra Queimada, ^{or Ilheus}
Serra Temerosa.

Alt:

300 m. s. n. m.

soil sample # 19

Fixed material

FRA: roots, shoot apex, buds,
in + stages - leaves

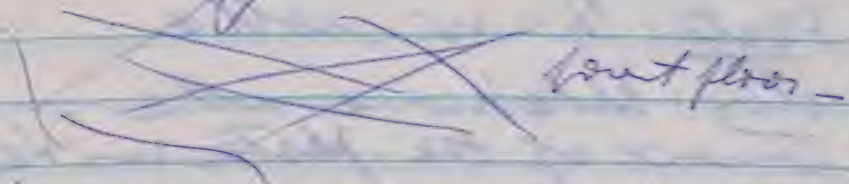
Photo: b & w - roll #

color: Ektachrome roll #
most of the photo with
tripode.

Rhizome: collected.

Very abundant on top
of the Serra in wetter

forest, up to 240 m \pm
the forest was cut and
there is a cacao plantation
beautiful bamboo,
creeping all over the forest
floor, making it difficult
to walk. Culms
rooting at nodes over
the ground for long
distances and then
climbing and leaning
on a tree and starting
branching.



We measured one bamboo
culm from rhizome to
top branch: 44 meters!
Rather small rhizome
Internodes of culm

not very long.
Culm nodal with persistent
sheath. Sheath blade
long triangular not reflexed
buds! below sheath
they do not break through
the sheath. Probably
they are covered by a ~~thin~~ ^{thin} tissue
from the nodal region
or so.

Buds developing in ~~opposite~~
opposite direction of the
tip of the blade.



One main bud in the center
with smaller ones on the
sides

In branches they develop in
6 branches per node

Brachet culms + erect
or leaning on vegetation
+ 10 m or more.

This bamboo grows only
on the top of ~~the~~
the mountain, no one
seen below.

No Oryzias seen in this
serra.

Merostachys

March 25, 1972

2190

Bamboo

broil, Bahia, Municipio de
^{Tehuacan} Tehuacan, Distrito Puebla
Quemada, Faja de
Rancho Formosa

Alt. s. n. m. 120 m

Abundant in forest
Beautiful forest, in places
~~and~~ they have about cutting
trees, in some places all
trees cut.

Bamboo of 12-15 m tall
leaning against trees and
vegetation. Culm below
culm sheath soon
deciduous with blade
reflexed and very soon

falling.

Many branches per node
(6-10)

soil sample #20

FAA - 1 trial with leaves
& buds in 4 steps
no photo (rain!)

culm with rather thin
walls, easy to break →

2 rolls color sent to Rio (3 in
canaro)

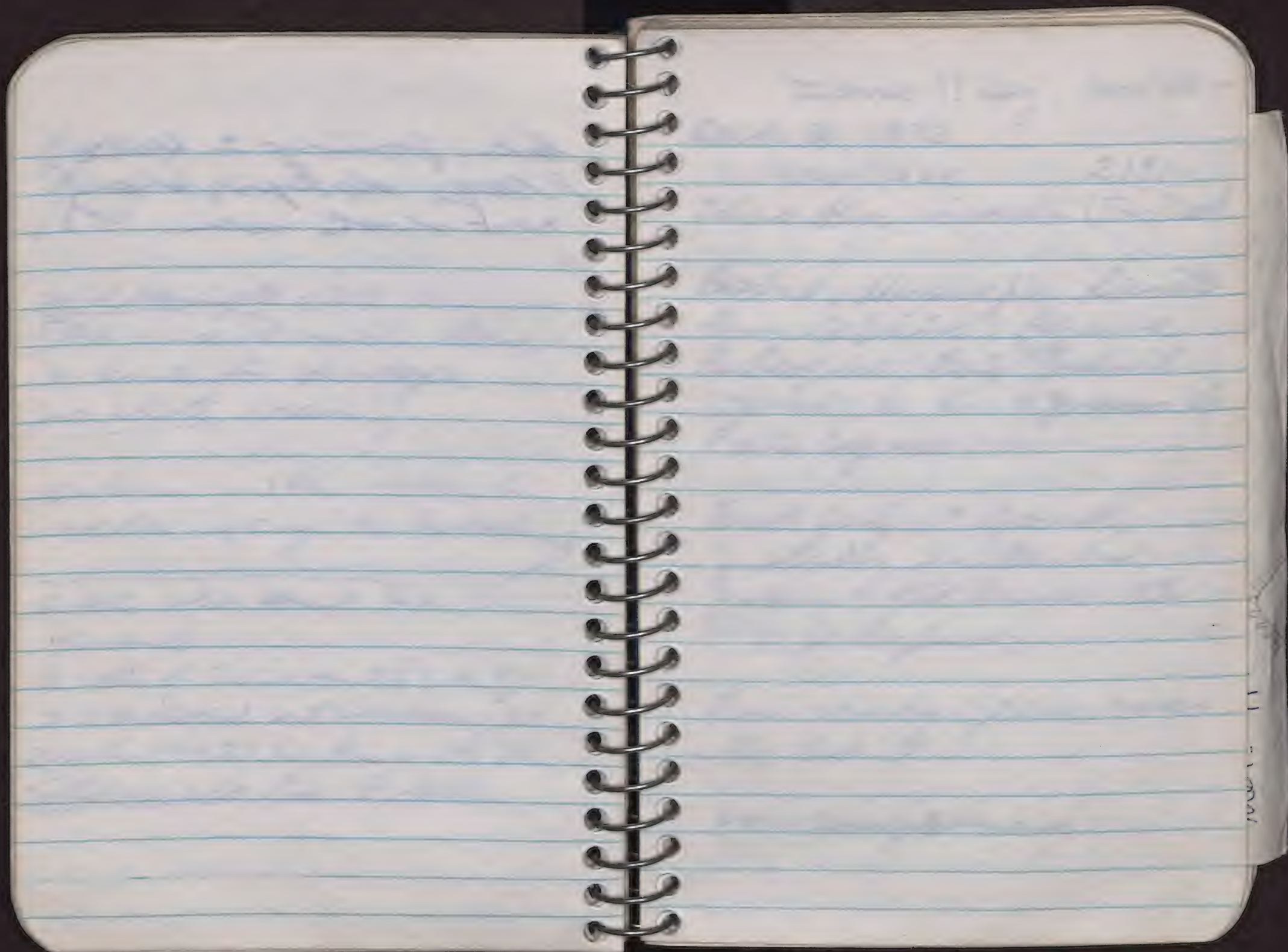
6 rolls of Tri-X sent (4 to 8)

#3 developed at Hatanue (OK!)

2 rolls (1 & 2) in Rio with Tom

Total sent to Rio: 8 rolls

culm forming ± dense,
large slumps, many
new shoots seen.



Diarrhea !! day - horrible -
March 31, 1972

K, MO, NY, P, LE, B, F

2191

Lobelia sp. *riedelii* (Trim) Doell

Bahia, Municipio Santa
Cruz Cabralia, Reserva
Biosférica ~~Pau Brasil~~ ^{Pau Brasil}
(CEFLAC). 16 km W ~~pass~~ of
Porto Seguro.

Beautiful 1st forest,
probably untouched
from the time of
the Portuguese.

In shady place, near
the trail.

FAA - leaves, inflorescences.

2192

Pharus sp.

Small plants with narrow
leaves. Inflorescence
with a terminal
spike (small) ending
the main axis. This is
thin, threadlike as in
other *Pharus* but terminate
in a dense spike.
Very few plants, only
one collected, the one
blooming.

no soil sample, no FRA,
no photo (time too long)

K, MO, NY, P

2193

Heptachloa spicata

soil sample # 21

soil temp = 77°F

Atm. temp at 1.30 p.m.

at plant level: 76°F.

Alt. s. n. m. 100 m.

soil sample # 21

Photo: color & B & W:

film rolls # 10 (black & white) - ~~10~~

In rather open place,
along a trail. In shade.
Inflorescences: 2-3 per-
tial inflorescences forming
the sympanthecium.

Very few plants
with flowers.

~~The~~ Fixed mat: FRA
(incl: leaves, roots, and
spike)

Merostachys

2194

Bamboo

Climbing bamboo, culms
weak, round thin, branches
up to 6-7 m. Most plants
lower. 3-4 branches ^{per}
node; in ~~small~~ ^{thin} all branches
2 ^{per} node.

Culms hollow,
culm sheath falling.
culm leaf blade deciduous,
bent downward.

Leaf large, oblanceolate
with oral setae milky, white
rigid: collected

Boths small clumps, not dense
FAA: base, sub + steep
roots - petiole with setae
soil sample: # 22

temp. high = 82°F. ? not sure

at 5 p.m. = 72°F.

soil temp. =

alt. s. n. m. = 100 m. s. n. m.

Photo: b & w 18 pte rolls

11.

color = harto 23 rolls also

n° 3

Abundant in the
forest but not forming
dense clumps or being
dominant vegetation

2251X Menziesia?

2241X Astrantha

1912X TRS

Colanthe

Mar. 11

- 2265^x: *Merostachys*
 2264^x: *Chusquea* ~~X~~ *Rhacoma* the
 2266^x: *Argemone* ~~the~~ *keet*.
 Aulonemia ✓ *inval*
 (*symmetrica*)
 2257^x: *Merostachys*
 2256^x: *Attractantha* ✓ (*auriculata*)
 2252^x: *Merostachys*
 2209^x: *Bolanthelia* 3 ~~leaves~~
 2210^x: *Bolanthelia* ~~3~~ *Merostachys*
 " "
 2258^x: *Chusquea* (*ss. inversa*)
 2183^x: *Chusquea* (*ss. inversa*)
 2180^x: *Bolanthelia* *Attractantha* ?
 2260^x: *Aulonemia* *Merostachys* *ternate*
 (*grandifolia*) *Nes.*
 2202^x: *Merostachys*
 2199^x: *Merostachys*
 2229^x: *Bambusa* (same as 2234)
 2228^x: *Bambusa*
 2233^x: *Attractantha* (*longispiculata*)
 2232^x: *Merostachys*
 2234^x: *Bambusa*
 2236^x: *Merostachys* ?
 2240^x: *Merostachys* - (copy of 2236)
 2194^x: *Merostachys* ? *Merostachys*
 2190^x: *Merostachys* ?

2251 *X* *Menotachya*?

2241 *X* *Atractantha*

1912 *X* T.R.S. *Colantheleia* *entropia*

Mar. 11

temp. high = 83°F . ? not sure

at 5 p.m. = 72°F .

soil temp =

alt. s. n. m. = 100 m. s. m.

Photo: b & w 1 18 p. rolls

11.

color = karto 23 rolls

n° 3

Abundant in the
forest but not forming
dense clumps or being
dominant vegetation

X: ♂ spl. reduced, only 2 flowers at
the base of ♀ in lateral inflo.

April 1, 1972

Cryptobolus

2195

Physa? capillata

Ba. Mun. ^{St. Cruz} ~~Agua de Santa~~
~~Agua de Santa Cruz~~

Cruz Labralis, 8 km north from
the road to Santa Cruz Labralis

Photo Ba W: rollo 11 split

19: al final, maychad's 13.

foto de O. ramosissima

rollo 12: 1-12

colos: rollo 3-24-34

soil sample: # 22

F.A.A. = 2, seedlings, 2) leaves, spl.
root

bois: 1 ♀ spl. 3:1 - 1 flower

Soil temp: 77°

Atm. temp = high = 80°F.

alt. s. n. m. = 80 m.

In primary forest, not
very dense type. Near
open places. Forming
clumps of large plants
up to 2 m. high.

Apical inflorescence "paniculate"
of ♀ & ♂ in the lower
part of the branches. From
the nodes below, ♀ inflo.
only. Both, terminal
and lateral, sometimes
with 2 paniculate.

No very young terminal
paniculation yet found.
Plants with more light
near the opening of the
forest bloom well. In the darker
areas no flowers.

Long, plumose stigmas out
of the 2 spl. ~~stigma~~ from the sides.
→

2196
Ichnanthus sp. lepanophyllus Ag.

Same place that *O. capillate*

FAA = 1. less flowers
Near the edge of forest
in open places but not
direct light.

→ soil relatively dry (not
muddy). sandy. In the
edges of the forest & road is
"white", grayish sand.
Huge terrestrial bromeliads seen
O. capillate growing well
in many places with *O.*
ramosissima

2197 - *Pirenia leptophylla* -
soil # 23

K, MO, NY, P, LE, B, F, G, W, ISC, WIS, SI, SP

April 2, 1972

2197

Pirenia leptophylla

Bo. Mun. Santa Cruz la Vieja.
Rd. to Santa Cruz, 8 km from
the road to Cortés delgado

Photo box, roll (12) from 13 -
to 28.

end of colony with 3- and (1 or 2)
soil sample # 23

living plant = collected

FAA = 1.4 with leaves & flowers.

" 2.0 with seedlings

1 living:

1 3:1

Abundant.

About 100 m farther up from
the area of *O. capillate* (probably
the same place or near where I
found it in 1968). Beautiful
primary forest, open type

with sandy soil.

Delicate plant in discrete clumps ~~is~~ growing in dark places. Base mostly all inflorescences from the base of the plant in a separate shoot, decumbent partially covered by dry leaves. Only a few plants found with inflorescences at the apex of the main culm.

Few clumps exposed to light or ~~in~~ ^{along} at the edge of trail very ~~short~~ short, almost dwarf, very light green or yellowish and with few flowers or ~~are~~ none.

Spikelet purple red.

Plants growing in the

sharkest areas are the most vigorous, tall and with many inflorescences. It seems that light inhibit growth and flowering of plant. Also leaves turn yellow. Abundant ~~also~~ ^{all over} an area of ± 200 m from the road, deeper in the forest not found.

April 3, 1972 2198

Olyra ramossissima

Bo, Municip. Santa Cruz do Rio
Reserva Biologica Pôrto Brasil
16 km W of Pôrto Seguro

soil temp. 76

soil sample # 23

FRA = lvs, spkls, petiole

and 1 branch-system

boog = para. spkls.

5:1 = end -

Photo = color 2-3

b + w = rolls 12 for 28-28

to end - (Alpena just con

O. capillata on roll # 11

Growing near stream and
at edge of forest. ~~in~~
~~spkls~~ climbing or leaning

over vegetation, very ramified
looks exactly like *O.*

lateralis from Manaus
but a much robust plant
most inflores. part.

Bamboo

April 4, 1972

2199

Ba, Mon. Santa Cruz Isabela,
8 Km W of Põto Seguro.

Chusquea? Merostachys

Photo: color, series ± 6 or 8?

b & w. - rolls 13 : 1 - 22 -
finishes 12.3

soil sample # (24 = 20 cm)
25 = 40 cm.

soil temp = 78°F.

Atm. temp. 78°F at 11 a.m.

Alt. S. m. mar = 70 m

climbing bamboo, very abundant
dominant plant in the forest
under the canopy. up to
15 or more m. tall.

culms hollow, up to 3 m
in diameter.

Culm sheaths deciduous,
edges by a long, white
pubescence. Culm blades
small, narrow, bent down-
wards, falling very soon.
Culms, apex, green.
near the base, internodes
short.

Many branches for node
borne from a ^{very} node.

Branches over arching and
hanging over other, septa-
tion. with leafy branches
in a puff from the node.
Forming rather small
clumps scattered through
the forest.

New shoot sometime
very tall, ± 10 m
without branching.

ERA = leaves, base of leaves
with petiole. Suckers in seed
stage - roots.

Rhizome : collected, 2,
one from old, thick
culm, other from
small, thin culm.

April 5, 1972

2200

Brenesia

62. Municip. Põto Separa. ~~Re...~~
~~Forest~~ Parque Nacional
Monte Pascual.

Alt. s. m. m. = 260 m.

soil sample # 26

soil temp = 78

temp. at \pm 1 p.m. 82°F

F.A.A. - leaves, roots?, basal inf (2 yrs)

boq. - basal inf. & subterr. inf

3:1 = no

"seeds" = collected!

seedlings = in herbarium (9-2)

one the seed felt

sandy-mulch soil, stones
at \pm 45-cm depth

Plots: 6 x w - soil 13 - 23 - 28

leaving plant collected
Frequent in forest on
gentle slope of the mountain
growing in \pm sand or
finer clumps scattered
throughout the forest.
Most inflorescences in separate
shoots \pm short, ascending.
Also many subterranean
shoots with "distichous"
fruit: large, rounded, white.
In shady places.
Other plants growing with
Brenesia: Phoradendron and
one sterile Olyra, unfor-
tunately not collected.

2201 - *Schmantes* FAA / no soil
2202 bamboo - soil = 27

April 5, 1972

2201

Schmantes pallens (Sw.) Munro & Benthem
br. Sabie, Municipio Porto
Seguro. Parque Nacional de
Monte Pascoal,
Schmantes

Frequent near creek
in the lower part of the
mountain.

No photo, no soil
FAA: leaves.

75°F

(diarrhea day !!)

April 6, 1972

Microstachys 2202
ba, Mun. Porto Seguro, Parque
Nacional Monte Pascoal.
Bamboo (bamboo?)

In primary forest, not very
high trees, dominant plant.
climbing and leaning against
other plants, trees, and
many palms. Very few
terrestrial plant growing
in the area.

Alt. s. m. area = 210 m - 75°F
soil temp = # 27
soil sample = # 27

FAA = root, leaves, culm,
buds in 4 stages

rhizome: collected. (2)
culm: hollow, fragile, breaks
very easily, about 1-1.5 m
in length at the base of

old canes.

Form not very large clumps. Branches up to 10 cm high.

Many branches from a node, in thin branches very few, 3, 4 or 6; in old or thicker culms many branches forming a wreath like of thin branches with the leaf complement.

leaf thin, small - culms rather smooth but in very thin branches or

superficial ("hija")

Culm sheath deciduous, with blade Δ , reflexed, falling very soon.

Soil & areoles - scillous.

Photo: b & w = 2 or 3 with 13

color = 2 or 3.

K, MO, NY, P

2203

Pharus (grade)

In dark places, in small clumps, airtolids.

Very dark green leaves - broad,

Near the trail, where the bamboo grows -

Alt: 210 m.

Soil temp = 75°F.

FAA = leaves, root,

petiole, few spikes.

3:1 = few root tips -

& no photo

K, MO, NY, P, LE, B, FG,

2204

Streptopogon americanus

Monte Panazol - (see photo +
keys for el. bamboo)
no altitud, heavy rain

Soil sample = 28

no temperature -

F.A.A. = 2 vials: a) leaves, spk.
b) seedlings

Bog. = 1 vial, spk.

3:1 = few spk, probably too old.
fruits = collected, few

In a very humid patch of
the forest. In \pm open places.

In the same area. Bromelia
(narrow leaves) very abundant.
Streptopogon grows in clumps.
Many *Heliconia*, ferns. and
no bamboo. All plants
in flower.

soil = very red color,

No photos yet. (rain!)

Next day: in other area of
the park at 80 m. S.N.M.

photo: color. 3 \pm

b.x.w. = \pm 6 fine roll 13.

soil sample (2 vials at 80 m.) #29
collected: a few more specimens
with the same number.

In a secondary forest, humid
and dark.

reed: collected.

~~Dead~~ living plant = collected

~~Johnanthus 2206 - soil #31~~

April 7, 1972

K 2205

Pharus sp. (narrow and long leaves)

soil sample 30.

In 1st forest, near trail in dark place.

leaves long lanceolate, narrow. In some

plant seems to be a "little spl." at the end of the inflo. axis termination. Most of the inflo. ± young.

Photo: no (dark)

FAA: leaf, petiole, spl.

Boq: spl. S:1 = no.

Parque Nac. Monte Paranal

Path of foot near the entrance

re. alt: ± 80 m.

red soil

Det. Michael Hickey

2206

~~Johnanthus~~ ~~hyperophyllum~~ ~~sp.~~

Parque Nac. Monte

Paranal. In "cappuccino"

along shady trail before the good forest.

Soil sample #31

FAA = leaf, spl.

3:1 = spl.

alt. S. m. m. ± 80 m.

2207 →

April 8, 1972

2208

Crematos monothalamus is
Be. Rodona Itamaraju -
São Paulinho, 4 Km W
of Itamaraju - Municipio
Itamaraju

In ~~the~~ secondary forest
near trail, under other
plants. Pl. of 30-70 cm
high.

Narrow, thin leaves, many
in the leaf complement.
No apical infl. found.

¹⁰ Basal infl. with two
to 20 leaf blades developed

Photo: b x w = roll 14 for
1 to 10.

Color: ± 6 end of roll 4

soil sample: # 32

test ~~transp.~~ =

Also found "white ball" ~~at~~ ⁱⁿ ~~the~~ ^{the} middle
near the end of log
or more or less short white

Stems - No apical flowers.
~~Fls~~ 2 seedlings of
"normal seed" collected
for herbarium.

FRA = 1/2 - leaves, infl
basal "normal" type and
white ball.

Bois = basal infl (normal)
3:1 = " " normal type
and white ball.

Lying plant collected.
Alt 15 m or more = 120 mm

Schranthus 2207

In same place? Along trail in
shady places -

Schranthus nemoralis

wh

Johnston 2207 →

Athrostachys capitata

~~*Lomatium*~~

2209

K, MO, NY, P, L, E, B, F, G

Same place as 2208

Bamboo

In a very disturbed area
west of front.

Only few patches of the
bamboo in good shape

Alt. s. m. m. = 110 m

Culms - solid; in small
branches with a little
hollow in the center.

Climbing, culms ± 1-1.5
cm diameters.

3 branches x nodes

no spines, culms smooth
sheath persistent but blade

deciduous - blades all,

long & downward.

Plants up to 8 m ± tall.

red soil

→ 2207

soil sample # 33

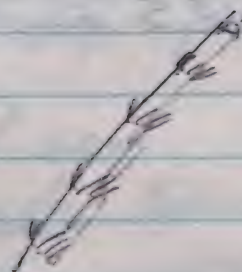
FAA = leaves, petiole with
base of leaf; roots, culms
cuts in 4 stages

3:1 = root tips -

alt. s. m. m. 120 m

Photo: b & w - roll 14 from 11.

color: Kodachrome from 1 to



Athrostachys capitata
~~Lolium~~ ~~Helic~~

April 9, 1972 K, MO, NY, P, LE

~~Penicillium~~ or *Bambusa* 2210

Riverão de Fere, 4 km S of
Itamaraju - Teixeira & Freitas
Município Itamaraju

Near stream in a very
disturbed area. No
flowers, probably a small
bamboo or *Placostachya*?
No photo.

F & A = leaves, roots, petiole

3:1 = root tips

Soil sample # 34 (red color)

Alt. s. m. area = 25 m

Long old tree

K, MO, NY

2211

Pharus, of (good leaves)
Same place. near stream
shady place.

Small plants of the
common tall, good leaves
Pharus?

no photo and soil.

F & A = leaves, petiole, root
spike.

Borg = spike.

Main axis of infl. in
a normal fashion

"^{run up}
~~the~~ inflorescence"

red soil

check specimens. there is
one with terminal
spike.

K 2212

Pharus sp. (narrow leaves)

Few plants under higher
spot in a very disturbed
area. ~~See~~

Inflores. axis ending in
a terminal spike

few plants, only in
herbarium. no photo was
fixed.

In the same place we
saw many Eumita (nar-
row, thin leaves, medium &
small size. up to 60 ± 0.50 cm

K 2213

O. micrantha

✓ a very disturbed,
horrible place, with
Scleria and other
weeds.

Old plants, thick
culms and very
large leaves. Only
old infl.

FRA = leaves, base of glode
with petiole

K, MO, NY, P

April 9, 1972

2214

Bo. Hum. Itanagraj. ca. 4 km
North of Itanagraj city -

Caradistys

~~Caradistys~~ monophylla

In a secondary forest,
near the road - shady
place. (Very disturbed, seems
that have been cut very
near, recently -

Many plant with old
symptoms, ± 3 partial
infl. each -

FAA - 2 sp. l., leaves

Bo. = 0 "

3:1 = 0 " and 1 root tip -
no photo -

soil sample: # 35

pubescent! W

10, 1972

Chiron sp.

2215

a sp. (chirpito)

Itapebi - Fazenda

Sentania ± 15 km North
of Itapebi (at ± 3 km of the side of the
stream (beautiful!) with
rocks.

Soil sample 36

FAA - leaves, roots & 1 infl.

Alt. S.M. var. 90-100 m. \pm

At the edge of stream,
rocky and shady. (stream
with small "cascades". They
call this kind of small
stream "ribeirão"

Very delicate plant
most of them small,
looking like *Piresia*
Goeldii or small *panamian*

K, MO, NY, P

April 9, 1972

2214

Bo. Mun. Itamarajá, ca. 4 km
North of Itamarajá city -

Cardinalis

Cardinalis monophylla

In a secondary forest,
near the road - shady
place. (Very disturbed, seems
that have been cut very
near, recently.)

Many plant with old
symptoms, ± 3 partial
infl. each -

FEA - 2 sphl, leaves

Borg = 0 "

3:1 = 5 " and 1 root tip -
no photo -

soil sample: # 35

June 2 pubescent! W

April 10, 1972

Streptocarpus sp.

2215

Raddia sp. (oblique)

Bo. Mun. Itapebí, Fazenda

Ben. Ventania ± 15 km North

of Itapebí (at ± 3 km of the side of the
Stream (beautiful!) with
rocks.

Soil sample 36

FEA - leaves, roots & 1 infl.

Alt. S.M. was. 90-100 m.

At the edge of stream,
rocky and shady (stream
with small "cascades". They
call the kind of small
stream "ribeirão".

Very delicate plant

most of them small,

looking like *Pieris*

Goeldii or small *panafrican*

2216 - *Raddia brasiliensis* (soil 37)

2217 - " *stair de...*

2218 - *boix leucocoma hirta*

FAA 1 ♀ inf, leaves, roots

2217 - Radd. y. - FAA leaves

18 - *boix* FAA y. *boix*

Lycopodium. Most of the plant stent, but probably for ~~these~~ *these* require, no rain in many days.

Few ♀ inf. seen, spk. very small.

Grows with ferns at the edge of the water on the rocks, (seen to be very little soil there).

FAA: leaves, roots & 1 ♀ inf. no *boix*. no 3:1

~~soil sample~~: Photo: b & w. end

(+10) of roll 14 - no color.

2216

Raddia brasiliensis?

Same place, not far from the 1st *Raddia* digitate.

In a little higher place on top of shady, big rocky masses.

Abundant, forming a cover. ~~Here~~ (Very dry season, soil dry & bad)

Plant looking bad, "mutilated". Few with flowers, most of them old.

Leaves thin, glabrous or little pubescent under the base.

Many plants, rooting at the nodes, like stolons.

Look like the Raddie we
collected in Torcorado on
Tombi.

FAA ^{only} ~~no~~ long 311
leaves, 1 ♀ in fl. root
Photo = no (or 1 at end of root 14)
Soil sample # 37
Very long and thick root
some of them up to 50 cm
long.

In this place, near the Raddie,
we saw one small plant
looking like *Panicum laevigatum*.
Small plant with
long oval petiole. Podia re. tankian
un. br. to. per. panic + Pan. an.
Podia et. spum. per. g. con. tante.
Raddie for white and olive
to also.

See Mrs Chase 7959 from
Bobie, steril, with long stolons
but ≠ sp.

stolonifera 2217
Raddie? (*Olyra tenuifolia*
steril).

(Same area, near the
other R. position.
In a small patch,
very dark. Plants
under 50 cm high.
Leaves short, dark
purple (or red) on the
abaxial surface.
Very thick roots,
Raddie type.
Plant, (some of them)
rooting at the nodes.
FAA = leaves & root -
no Photo, no soil.

Coix laurina, K 2218
Same place - at the
edge of the stream
~~with~~ in open place
with other weed.

FAA = leaves, infl -
Barb = infl. & aripe
no soil, no photo -

The forest along the stream
cut, 2 ake, with
cacao plants, best.

April 11, 1972 2219
En. Co., Municipio Laurenses,
Lapoa Dorada, 30 Km ^E of
Mamocay, Rd. Laurenses -
Laurenses.

Diandrya (pauze)
In open forest, old ~~sec~~
secondary forest, not far
from the "lapoa" - ± 200 m.
Abundant, ~~low~~ ~~plants~~
forming small clumps.
rather dense.

Variable in size, usually
the smallest plants in
exposed, open places, trail,
etc. light green leaves, "entire"
The ~~most~~ plants forming
in the shade looking
beautiful, tall and
blooming but flowers in
very few plant, probably

because no rain in
many days, soil very dry.
Most of the plants with
white-fairy spots, like
fungus infection.

Infl. dense, most of
them in short-one-leaf
columns, hidden under
the blade in a Hede-
ra fashion. But
frequent also inflores-
cence terminal on the
main culm. Infl. small
dense, compact & spk
as the large (like *Stenotaphrum*
from Ferradana.)

That forest was cut
here and there to plant
cocoa plant, many years
ago but later abandoned.
Now looks like a

1st forest, and forest weeds
seen; open, low type of
forest, with more or less
thin trees and some
big, very thick trees.

Alt 3. m. m. = 100 m.

Soil = ~~Acidic~~ temp = 77°F

Temp at 1 p.m. = 80°F

FRA = leaves, few in flower.

Soil = few in flower.

Photo: b & w only with 15 from
1 to 15' ^{at 8' & 15'} most of them with
tripode ^{at 8' & 15'} A few
without on the trail with sun.

Soil sample: 38.

some place, but a little farther

2220

Eremites grande

In a disturbed area
near the edge of the
forest, ^(other plants from roadside) ~~other plants~~ in shady
places and other plants.
Tall, upright plants
with large leaf blades
root on the ataxial
surface. Many plants
with apical inf.
Some with two,
probably from the two
upper nodes of the cul.
basal inf. of the two types
the normal superficial
and the subterranean
ones. Some seedlings
seen and collected in FRA
large seedlings from subterr.
seeds.

Plant tall, 1.20 - 1.50 m
~~that~~ with thick culms.

In One apical inf I think
I saw the tip of a thick
raquilla or inflores.
upment. It was fixed
in the FRA rial.

FRA : 2 nodes : 2) basal, inflores.
Apical & basal & upper.

b) seedling

Bouquet : basal inf

3:1 = apical inf. (Horta?)

Soil sample 39, sandy
soil.

Photo: 5 x w. only few of seed
15. Horta 17

to papame a pague a para my birds.
Le apus transparente, apul 7
con pennis, volucrios en
el fondo, se ven manablos como
si el apus estuviere herviendo

Dicen que son super, y rico
en vitaminas, esta una
pequeña extracción, dicen
que está a 20 m de po-
ndido y bastante sano.

~~ind. day!~~

April 16

2221

Be, Municipio Iquitos

± 3 Km North of Iquitos?

Panicum sp

Side road from. Very
abundant all over. Botia
large plant 130 - 160 +
collected only few specimens
for herbarium, young.

FAA = in fls - leaves
long = "

2 vials

União

2222

Diandrysa grande

Bo. Mun. Ibirataia, Foz de
Boa União; 20 Km North of
Ipiau.

Photo: b+w roll 15 from
18-31-

Notes: Kodachrome roll #

± 506 can flesh -

FAA (2nd) a) leaves, base of leaf
with petiole, one shoot apex
in flower.

b) seedlings

Boys: infloresc.

3:1 infloresc.

Young plant collected.

seed: one cup with
mature ♀.

Soil sample # 40

4 vials

Alt. 3 m. max. 175 mm

Soil Temp = 76°F

Air Temp = light in the day 76°F
at 4:15 pm 72°F

In a 2nd forest, under
cocoa plantation.


Smooth slope, shortly
with many Pteris-like.

Very open type of formation
with tall fruit trees and tall
cocoa trees.

Scattered all over the place
but not forming carpet.

± Variable in size, two growing
in darker place, taller. Some
culms with ~~old~~ leaf comple-
ment of many leaves, decreasing
in size from the tip of the
culm downward. Other culms
with larger leaves, fewer in
number.

Most of the inflorescence very short,
some very little culms with
one blade. The infl. is always
hidden under the blade in a
pseudostachys fashion. These fertile
culms, sometimes covered by
dry leaves; some of them are
in decumbent position.

 Very few infl. seen at the
top of the main culm,
most of them old, without sphl. ♂
sphl seen to mature first and
fall very soon. Absence of the
sphl, below the flume, the capitate
sphl falls. ♂ sphl with 3 stamens
and (rare) glumes.

April 17, 1972

K, MO, W, P, L, E, B, F, G, W, I, S, C, W, I, S

2223

Olyra (~~secundata~~) *secundata* Poell. rel. aff.

soil sample # 41

Bo, Mun. de Ibirataia,
Rd. BR. 2, a 7 km North
of Ibirataia Fajuda
Santo Antonio.

* Small out of forest at the
edge of a "canga". (It is
a very small stream,
probably accumulative of water
in a low, ~~lower~~ depression.
Near the edge of the forest
in open or more or less open
place. Huge plants in
large clumps forming a
big mass, the plants tall,
erect, up to 2.50 m.
4 m

2224 - Arberia. soil 42

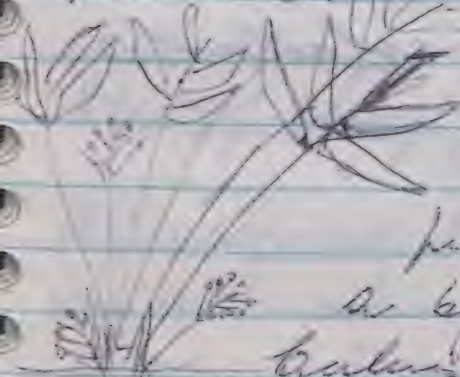
2225 Paspalum orrag. soil

2226 Pirenia soil - 43

Culms with a few leaves
at the top like a fan.
Large blades, hard and
rigid. Leaves along culm
with small or reduced
blades. Very few plants
with flowers and those old.
Tup. a panicotium (large)
growing directly from
the base of the culm.
Some without leaves (young)
Variable in height, some
short (20-30 cm) others up
to 1.20 m. Some old
flowering culms with the
duration of 2" and 3" partial
infl. In one plant the
infl. culm ~~had~~ few
leaves with small blades.
Some infl. a little with
and rising about at

the base of the culm, with
a very short axis.
Anterior pitted?

Most of the plants in
the area young or in bud
shape, with the leaves
covered by fungus or other
disease.



Dark green
leaves, a little
rust, but not
perforated, (like
a big bamboo leaf)
culm: hollow.

FAA: leaves, base of shoot
with petiole, a few of sphen.
partially old. 2 vols

Borg: few of sphen.

soil sample: # 41

Alt. 1. m. m. 170 m.

soil temp. = 75° F.

Photo: 6 x w. roll 15 (per) from
31[±] - to end. x Roll 16. from
1 to 15[±] (some at the end
of the Arlene's photos - with flash.
Also inst. taken with flash.
some small emitters (2 & 3)
flash at 8!

color: no.

Living point: collected.

hermaphrodite!

2324

Arseria? sp. ind.
Same place Rd. 30, Municipio
Ibiratama, Rd. 30. 2, at
7 Km North of Ibiratama city.
Fazenda Santa Antonio.

Alt. s. m. m. 175.

soil temp. 75.

Air temp. ~~78°F~~ high
83°F

~~Abundant~~ Frequent, in
small clumps, all over the
place, (About 200 m from
the entrance to edge of the
forest. In a little higher
place than D. romifera
dark and humid place
growing in a smooth
slope a few plants near
the edge of the forest.

under *O. campiana*. All plants blooming!

Small, delicate plants up to ± 30 cm. Blades asymetrical, almost ^{broader} trisectate at the base. The plant looks like a little *Pteris pauciflora* because of the broad base, but the position of the symploca is equal from *Roddisia* *rotundifolia*. Symploca completely hidden under the leaves of plants in the lower node of the leaf-complement or in other plant, from several nodes of the leaf-complement but not from the terminal one.

Symploca: like a small

fan, with many partial infr., each one with long, well developed propyla. Each paracladia very close to each other, ^{opposed} so that the symploca is very short (like in *Pteris*).

Flower: one large, delicate, white female spal; small, white σ spal below. the production of paracladia seems to be very large and fast. It can be seen the last paracladia with still young spal and a new one arising. of Anthesis with hairs (no vi hair) seems at the base?

In some places growing associated with *Pteris*.

In the same area we saw
a few clumps (large and
pretty) of Diandrya
In some of the
anthesis time showing
2, long panicle, erect
from the sides, near
the tip of the anthesis.
Seedlings: collected, "bamboo"
Type with first completely
developed blade horizontal
broad, asymmetrical at
base.

Photo: b+w: roll 16
+ 15 to 31. at very
long exposure, (at 2:30 - 3
almost impossible to take
photos. (Sun but some
clouds, not very bright day)
with tripod at 18 and 40
may without filter.

4 mals

Notes: ~~as~~ Si can plant ~~today~~
nodochrome next day (p.m.)

FAA: 2 mals: a) leaves, base of
blade with petiole, roots,
one short apex. flowers
and of sp. b) seedlings

bag: of sp. above
young flowers.

3:11: young + stage flower.

soil sample: # 42

~~the~~ living plant: collected

In this patch of forest
grow: O. campianus,
Diandrya pale (not
collected) and Livinia
fasciata, Arberia sp. var.
One pretty bamboo (the
same we collected in
near Pedro de A. in 1960, but
in the same). Also a big,

pretty Ichneumon. Phaen of
and Streptocarpus (very few)
only one with fruits (collected)
and of course O. telephium, at
the edge of forest.
Forest with huge Ficus trees
many palms

2225
Rapanea or Brachylaena?
secumbens staff
60, M. Thirataria, Rd. 62.
2, at 7 km from Thirataria city.

Very stout, upright
at side road open
with other weeds.

Herb plant up to
1.20 ±

F.A.A. = leaves, inf in 7 stages

Bong = inf

3:1 = inf.

no soil, no photo.

3 vials

Johnston - 2227 *Peperomia*

April 18, 1972 2226
Peperomia sp. *rhaphiophylla*

Ba, Municipio Ibiratama, Rd.
Ba 2, at 7 Km North of
Ibiratama City. Fazenda
Santa Antonia.

- Small patch of forest
in a smooth slope at the
edge of a "corrego".

Frequent in ~~the~~ ~~the~~
shade, ~~and~~ shady places,
but rather open of repeti-
tion. (About 200 m from
the edge of the forest.)

growing in more or less
dense clumps. Beautiful,
plants of bright, ~~light~~
green. About 20-30 cm tall
Plants with a leafy complement

terminal infl = basal infl.
with 16-18 bract developed!

color: Kotschy with pink.

of several ones. Leaves at

the tip smaller. Abscised
surface of blade pubescent,
sheath with long pubescence.
Infl. mostly basal but
several also at the tip of
the main culm. Not

many flowers? Inflores-
cence pink. 9 ♂ sp. 1
hermaphrodite, 3 stamens
and a pistil in the
long style of 1 the same.

Alt = 170 m s.m. sea

soil temp. 75°

soil - rather loose, sandy

Photo = b & w roll 16 ft

color = Kotschy with pink

F.A.D. = 2 vials, a) leaves, infl.

b) seedlings

Boog - infl,

4 vials

2228 Do too with line 10 mm / 44
2229 11 mms (150+mm) 45
19 April

April 20

2230 Piresia 1

alt. ~~180~~ m - 5 m. m. m.

4 vials (ready)

Soil 46

living plant.

Soil temp. 75.

max temp. 76°F at 2 p.m.

min temp. 70°F at 8:30 a.m.

7 Km North of Gaudin, Fajardo

Piresia 2231

Soil 47

Rancho de Fajardo Bon

San Jose, 7 Km North
of Gaudin

4 vials -

alt. 200 m -

seeds - living plant

3:1" in fl.

living plant - collected -

seeds - one of seeds -

Soil sample - # 43

same place

2227

Lechnanthus nedelii (Trin) Doell

For study place near Piresia

large plants at ± 1.20 m. m.

Wood, large leaves. Only for

old inf. no flowers.

F.A.A. = leaves -

1 vial

(Bambusa)

April 19, 1972, K, MO, NY, P
Spiny Bamboo 2228
DO, bluish-green, 2 Km
North of Jandui City, Rd B,
101, Fed. Santa Antonio.

In forest and at the
edge of forest with coo-
plantation -
Large, huge bamboo, up to
12 or 15 m. culms
overshadowing over vegetation
culms thick \pm 7.5 cm
diameters, hollow, but
thick wall, green,
smooth over, or wax?
(white dust). Spiny.
One medium branch or
spine by node, usually
2 spines at both ends
of node or 2-6

smaller branches around
the main one.

The branches ~~from~~ from
the main, thick culm,
usually the lower ones

the branches are spiny
and then, at the end
form the leaves -

Culm sheath, dense, brown
with very small, short
blade ~~px~~ with ^{very few} stiff
black hairs ~~to be noted~~
(~~to be noted~~).

New shoot very thick
not seen branches.

Rhizome thick, isolated.
Leaf complement in
branches from thick
culm may, in thin
branches more.

Large, thick blades

2 nals
FAA: base, base of blade
with petiole, roots, culms
Photo: Saw roll 17
color (2° dry) light brown
base = young shoot with
pinkish red

(Next day, at 7 km N of
Jordin, seen in other
forest much more shaded
and beautiful (photo of ph)
Soil sample 44
rigid - collected

~~Bambusa~~ ^{Monicaulon} taboca capitata

2229

Bamboo (monocot, by base)
same locality -

In forest, about 15m
over vegetation -

Culm solitary or about
2 m one from each
other (Plyzom thick
with a thick stolon
interference from one
culm to another -

Culm + 4.5m diameter
below, culm sheath
with black hairs (pinkish
green on leaf).

Culm blade large & bent
downward. All deciduous.
One main branch, 2 or
more smaller from the
sides - leaf blade

long, narrow
soil temp - 76°
soil sample = 45
F.A.A. = Levee, Sudan -
rigid - colored
Plots = 11 x 11 = roll 17
color = blackish brown

trial

April 20 2230
Ed, Mamm. Wenceslao Jimenez
Rural La Paz. Bon Lopez, 7
Km North of San Juan City, Paz.
Oriental -
Pirena sp. ! hipiophylla
Abundant in open forest
& shady, ± dark place. (Open
forest: easy to walk through)
no "tendrils".
Beautiful plants of about
25-40 cm, light, bright
green. All plants showing
from the base of the clump
and from the tip of
the suber. culm.
Leaves smooth - pubescent
on the abaxial side. Sheath
pubescent. No basal leaves
in the top complement.
Like P. goldii, but plants

much more robust.

In many plants on 2 or 3 inflores. at the end of the main culm.

Flower = small, compact red or pink, sometimes green - one ♂ below the ♀ spike but the terminal ♀ spike with several ♂ below. Flowers start to open from the top to ~~bottom~~ the base. Seen that ♀ open first but it's about simultaneous.

At anthesis ♀ ~~stamens~~ antherium not open, stigma exerted only from the sides of the tip.

♂ spike becomes prostrate with the gynaeum; long style and one long, plumose stigma. This flower

opens completely at anthesis and the 3 stamens and stigma out of the ~~stigma~~ antherium. Stamens seen open and very thin pollen around.

♂ spike fall rather early, in more or less

time flowers only the ♀ remain.

Usually 2 partial inflores. from middle in the first half of the basal inflores. slender and branched, upright or decumbent, some almost over by long leaves, but usually the end of the shoot with the flowers coming out through the leaves.

Soil: sandy (loose) rather
loose rocks by "small"
dry leaves but not so
much as in bamboo forest
or zip leaf tree forest.
Plants easy to pull - (Never
seen so many beautiful
lilies with so much
inflorescence!) Many
plants with the terminal
symploecae.

Alt 180 m - 5 m. m.
Soil temp 75°F

Air temp high 76°F at 2 p.m.
low? 70°F at 8 a.m.

Soil sample: # 46

Living plant - collected
seeds = few

FAA = 2 vials = 1) leaves, apical
shoot, symploecae, 2) apical
3) seedlings -

4 vials

Long - flowers - 7 stages

5.11 - flower

Photo: b & w - roll 17th at 18
color: Ektachrome (no flash)
all in the tripod, few without
roll = 46?

Seedling: Sambar type
first completely developed
blade, broad lanceolate.

In the same area, a little
before the place we saw a
lot of the spring bamboo and
also the thin leaves one collected
today in garden.

2231

Panicum lanceolatum?
Same place as before, but
± 300 or 400 ft higher, and
a little higher.
alt: 200 m. s. m.

Abundant, in forest
near the edge.
Robust plant, tall,
up to 70 cm ±; some
smaller growing in
a cut area, exposed
to light. All plants
blooming.

Few large oral setae
but in some young,
small plant and
infl. large, thin, 2 ♂ & ♀
spike ending the axis but
separated but a rather

long internode from
the rest of the inf.
♂ Infl. small with 3 very
small stamens. An-
thers 2 long, they
thin tips as seen from
I also saw seeds in
fluffy well mature capsule.
Many young plants and
seedling near around plants.
Hard to find fruits, infl.
brakes and fall capsule
by only remain the base
of the seedling in a row of
caps. ♀
It doesn't look like
P. lanceolatum & *Abutilon*
This one is much more
robust. and infl. much
longer.
All infl. terminal

4 mats

to the main culm
FRA - 2 vial, 3) leaf,
base of blade, inflo-
root 5) seedling

body = infl + stage

3:1 = infl

But will take 7 developed
or mature infl with
caryopsis in the FRA vial!

soil sample: 47

seeds: few

living plant - collected
(new young)

Seedling: Beautiful! first
leaf with reduced blade
1st developed blade long & flat
narrow lanceolate, long-

Photo: b & w = roll 17

color: Ektachrome # 6 -

2° Jember (a flor) 2233-149
3° " kaga " " 2234

April 21, 1972

2232

~~Bombac~~ (Moro-lady) ^{all note in next section}

Men Wacelam Guimaraes,
Km 104 Rd Be 2, at 14 Km
North of Gaudin City.

Photo: color Ektachrome roll # 6
from 18-25.

b & w: roll 17. to end (± 10)

Soil sample # 48

alt - 175 m s. m. w.

Common in forest, forming
discrete clumps, not
very dense. Tall, ca. 15 m,
decumbent. Culms hollow
about 3 - 3.5 cm in diameter,
the larger ones. Culms
green, a little "ropens" (bamboo
"life") Culm sheaths deciduous,
very fatty, inside bright,

2° 6' S. alt. - 180

3° " alt - 140

1 m. alt.

smooth and glossy.
outside velvety - flowers
± small, tridactylous,
sessile. (leaf sheath)
very thick, like leather,
breaking branches from a
node. All branches thin,
about same thickness.
More branches in those
from thick, old culms.
Leaf complement not very
large. ~~Widespread~~ Delicate
leaves, long, lanceolate,
narrow bases, thin,
and not pubescent.

Pigou - very big, collected
FAA = 1 leafy culm, base, base
of blade, roots - buds + stems.

Soil temp = 74°F (cool day)

In many places of the
forest this bamboo grows

associated with other bamboos
(626.2233) of this, small
leaves which is growing.

It grows from 170 m -
to 200 m or more - abundant.

We saw people (women) cutting
the culms of this bamboo
for making roof poles.

They gather for cane waste
for use as fuel or for
the bamboo.

~~They~~ One new shoot measured
10 m with no branches
yet.

Attractantha (*longispicata* ^{new sp.})

Bombyx (fls.) 2233

Same locality but higher
(on steep, incline slope
of a hill.)

alt. 500 m. 200 m

(Rd. 2, it is the old
road between Rio - Sabana)
It comes out from the road
Road "Br. 101" ± 10 km north
of Jandua to the right
(It is in very bad shape!)

Abundant in the forest
in some places growing
with other *Sambor* (Bth.
2232). Tall ± 10-12 m
climbing, over other, repet.
culms solid, rather thin
and flexible, about 1.5
cm in diameter, forming
± small, not dense

clumps, the culm sheath
persistent or slender,
with blade small, a few
inches.

One main, thick branch
from a node, and
several others, thin
from the side.

Culm and branches smooth
pubescent.

Leaf complement of *Scleria*
± small, narrow leaves.

It seems it starts blooming
not many seen in flower.

Spikes long, narrow
cylindrical, in small

to dense aggregation at
the end of leaf comple-
ment or in young branches
arise from the node.

The "bracts" (or glumes)

in the lower part of the
spike with a reduced
blade developed.

Many spike were empty -
(leaf 8' time 3 stems)

Soil sample = 49

rigor = collected

FRA = large (250g) rich: leaves
buds & stems, symphoricarpos,
spike.

Good = large (50cc) mol: spike.

3:11 = " " " "

Photo = 5 cm, roll 18 from
1 to 15

Color & leptochrome roll 16

no seeds - no seedling / color

Fed in a mesh, late and
rain camp.

3 mals

~~Bambusa~~

Monocaulon

2234

Bambusa (2° in fls)

Same locality but at lower
alt. about 1000 ft.

alt. 140 m. S. m. m.

Same Bambusa collected

on April 19 at 2 km North
of Gaudin, i. b. b. 2228

At the edge of forest, in
disturbed area.

One main, thick branch
from node several small
thin one from the node,
culm. & isolated, not
forming clumps - leaves
narrow, long lanceolate
flavescens! long, thick
spike hanging like a
raceme from the id

3:10

of the main one of the
leaf complement -

some seem to be empty
pans were seen in
anthesis, open with
3 stamens, and 3 sta-
mens out -

Sphul of different sizes,
some small, other
large, about 10 cm or
more long, (7 stamens)

Photo: below only - for
16 to 22 ± roll 18

FAA - large vial (25cc) with
Sphul - (not leave, one stam
small apertures, very late, no
light and rain coming)

Bong = 50cc vial sphul

3:1 = " " "

no soil no rigors -

collected remains only flowering
leaves -

April 22

2.235

Adulphaga

2 vial

Very common road side
grass. Growing all along
the road between Jarami
and Tukera.

22-37

Merostachys

April 23, 1972

2236

Bambos (young)

60, *Humilis* *Stuberia*,

km 43 Rd Goudon - *Stuberia*

at 21 km of *Stuberia*

(There are 62 km between *Stuberia* and *Stuberia*)

Alt. 300 m. s. m. m.

Plot 6 roll 18 from 231 to end

color: Chlorophyll roll # 6 from 32 to end -

Abundant throughout the forest (Hill tree forest). Only septate

up to 15 m tall or more in clumps. Culms below

hard, strong. sup. a few internodes very elongated

22 - 37 inches. Culms

up to 2.5 m diameter.

Several strong, thick branches

2 vials

16 and more from a root in a root-like bush around the root.

Culm sheath very thick, deciduous, with a blade bent downward, decussate also - leaves large, lanceolate like *Oryza latifolia* and in a leaf complement, ^{1st} 1st from more.

One branch seems to be of first and almost in whole by the others.

FAA: 2 vials, 3) kept in the bush, 4) soil in the leaf, 5) soil in the leaf with base of blade and

soil sample # 50

soil sample, red-yellow, vigorous - collected

April 24, 1972

2237

Odyse umorissima

Bo, Mun. Comarca, Rolben
para Itirapitanga, 11 Km
SW of Comarca
alt: 80-30 m - S. m m.

First sample #51

col. (day?) soil

living plant = not collected ^{near a lagoon}

Frequent in a slope and
edge of trail. in disturbed
area along trail also.

Under Solms & other plants
large, old plants with many
branches. tall and in the
large flowers or a little
superior blocks. young
plant (from seedling) with
a large leaf complement
in a Pirene or Diadelphe

habitat. leaves smooth,
pubescent. Plant for wood
young erect, short, then
plant climbing.

Plants up to 1 m or a little
more.

In other spot I saw one
infl. at anthesis. Male
spike completely open
with a large gynodium
with 2 stamens, plane
exserted.

Hard to find young in flower.
it seems that the flowering
period is very short
and specially the ♂ spike
fall very soon.

Many paracardic seen
in some young flowers
with the prophylla (new young
tissue bractth)

♂ spk in the long partance
in the lower branches of
the acacia.

Seedlings abundant or
variable, some seem to
develop a leaf complement
of several leaves immedi-
ately; others the upper one
or two first branches
well developed stems.

Plots: 6 w. coll 19 from 1
to 10 (there are a few or seedling
or young plants)

Colo: Ektadone, coll #7
from 1 to 5.

FAA: 3 vials; 2) leaves, spk.

b) seedlings, c) symphoricarpos (without
flowers).

Bug: spk

3:1: ♂ spk.

This sp. is frequent
along the forest between
Lasham - Ipiwipitanga
as far as 30 km, but
rare in very abundant.
Usually grows on edge
of forest or near it,
and also in "toucin" at
road side.

5 vials

Pirene macrophylla

April 25, 1972

2238

Pirene aff. *symptotica*
(*Pirene* fulleri)

W. Kemp. Nilo Pegonha

Faz. Boa Retiro 14 km

North of Itabera (2.5 km

road to the right, W. of main

alt s.m. was 140 m.

soil temp: 74°

Air temp: high 74° at 3.15

low 72°

Photo: 6 x w with 19 from
11 to 25

color, Ektachrome with 7

from 6 to - 19

soil sample # 52

trump plant = collected

F.A.A. = 2 vials, 2 seedlings (many)

6) leaves, inflores. base of black

Bois - infl -

3:1 = "

4 mial

Abundant in shady place
of rather open forest (beam-
tiful forest) mix with
with sand. In small
clumps scattered all
over from ca. 200 m
from the edge of the forest.
Tall plants up to 60 cm +
but some are in size,
these growing in
recently cut spot
and along trail small
in dark place, protected
for other plant *Pirene*
grows beautiful, robust,
tall.

Glabrous culm sheaths,
a little inflated but
not hairy (like the
similar *Pirene* of
Usaitoka) large glaucous

± stiff, glassy, ataxial
surface white-gray-green

~~2239 Fehndtun~~

~~2240 Blandinella (at all times per
collected in garden - H. H. H.)~~

2239

Fehndtun *nervosa*

(Same area of Fehndtun 2238)

Abundant in open
places and along trail
(Many small plants)

Plots up to 1.0 ±
Flats.

FAA = leaves, spread
no soil, no plants

Incl

Newbaldys

2240

Baby bamboo

Near the trail in the
Pine forest.

Small plant in a
clump looking like
Panicum.

But, further into that
trail we saw later

a plant of the bamboo
in full size. It was the

big bamboo we collected
between Juncus & Hedyotis.

We also saw that
bamboo in the road
from Lamsam going
west.

Few herbaceous species
collected.

3:1 = few root b.p.

Inal

no photo, no soil.

no photo, no soil

2 Km North of Jandía, Rd Br 101
Fazenda Santa Antonia, Man. Jandía

Lot 52, 400m from city - 33m
22 W from 23

From Valença up to Br 101
Driving now stops, ± fast. it took
55 minutes.

JUNE CALDERON

Lucie c

Large Gossamer

Ass. Libani

Ref 2 Inf.

DJ 1-8259

3, 4
- hip -
corbata

Jorge Grossmann

Ass. Librarian

Ref & Inf.

DJ 1-8259

1725 Ist.

Off. of Regional Devel.

Cartographic Sect.

Lawrence Fahey

Tel. DU 1-8477 Premier Bldg. 706 D.

photographic
D. fig - roll 3, 4

D. 2219 - 16

D 2222 16

Piresie infl -

" leptophylla 9

" Haeae (2178) 13, 22 (68)

" Haeae (2226) 7-8 -

Haeae

17

" 2230 -

18, 19

" grade 2238

21

Evantes chico - 2174

" grade 2175 6-7

" Ubantote 2184 6-7

" M Porenel 2200 10 -

" Hamaragui 2208 14 -

" grade 2220 15 -

16 -

2 Km North of Garduá, Rd Br 101
Fazenda Santa Antonia, Mun. Garduá

Abstr. 32 foto Garduá city - 33 road
62 W from 23

From Valença up to Br 101
Driving now stops, ± fast. it took
55 minutes.

Lucio c

JUNE CALDERON

seraphines